

WHAT IS CLAIMED IS:

- 1 1. A dynamic carrier-selection method comprising the steps of:
2 creating a candidate carrier list from a plurality of carriers; and
3 changing from a first carrier of the plurality of carriers to a second
4 carrier of the plurality of carriers in response to a determination that the quality of
5 the first carrier is not acceptable, the second carrier being included in the carrier list.
- 1 2. The method of claim 1 further comprising the step of:
2 measuring a quality of each of the plurality of carriers; and
3 ranking the plurality of carriers according to the measured quality,
4 wherein the candidate carrier list is created in accordance with the ranking of the
5 plurality of carriers.
- 1 3. The method of claim 2 wherein the second carrier is the carrier, other
2 than the first carrier, having the greatest measured quality.
- 1 4. The method of claim 1 wherein the candidate carrier list is created by
2 arbitrarily selecting at least one carrier of the plurality of carriers.

1 5. The method of claim 2 wherein the step of measuring occurs in a
2 frequency-hopping mode and the candidate carrier list is used in a high-speed mode.

1 6. The method of claim 3 further comprising the steps of:
2 re-measuring the quality of each of the plurality of carriers;
3 re-ranking the plurality of carriers according to the re-measured
4 quality; and
5 updating the candidate carrier list in accordance with the re-ranking
6 of the plurality of carriers.

1 7. The method of claim 6 wherein the step of re-measuring occurs in a
2 frequency-hopping mode and the updated candidate carrier list is used in a high-
3 speed mode.

1 8. The method of claim 6 wherein the quality of the plurality of carriers
2 is measured with reference to interference and multi-path fading.

1 9. The method of claim 8 wherein the quality of the plurality of carriers
2 comprises a carrier-signal-to-interference-signal strength ratio (C/I).

1 10. The method of claim 9 wherein I comprises external interference and
2 self interference.

1 11. The method of claim 1 further comprising the steps of:
2 communicating an identity of the second carrier; and
3 marking the second carrier as being occupied.

1 12. The method of claim 1 further comprising, following the step of
2 changing, the step of listening by a first unit and transmitting by a second unit at a
3 priority slot of the second carrier assigned to the second unit.

1 13. A dynamic carrier-selection system comprising:
2 a candidate carrier list that includes a list of a plurality of carriers; and
3 a unit operating on a first carrier of the plurality of carriers, wherein
4 the unit changes from the first carrier of the plurality of carriers to a second carrier
5 of the plurality of carriers with reference to the candidate carrier list in response to
6 a determination that the quality of the first carrier is not acceptable.

1 14. The system of claim 13 wherein the candidate carrier list includes a
2 ranking according to quality of the plurality of carriers.

1 15. The system of claim 13 wherein the candidate carrier list includes an
2 arbitrary selection of at least one carrier of the plurality of carriers.

1 16. The system of claim 14 wherein the candidate carrier list is used by
2 the unit while the unit is operating in a high-speed mode.

1 17. The system of claim 13 wherein the second carrier is the carrier of the
2 plurality of carriers other than the first carrier having the greatest quality.

1 18. The system of claim 13 wherein the unit is operable to measure the
2 quality of at least one of the plurality of carriers.

1 19. The system of claim 18 wherein the unit is operable to measure the
2 quality of at least one of the plurality of carriers while operating in a frequency-
3 hopping mode.

1 20. The system of claim 18 wherein the quality of the plurality of carriers
2 is measured with reference to interference and multi-path fading.

1 21. The system of claim 20 wherein the quality of the plurality of carriers
2 comprises a carrier-signal-to-interference-signal strength ratio (C/I).

1 22. The system of claim 21 wherein I comprises external interference and
2 self interference.

1 23. A dynamic carrier-selection method comprising the steps of:
2 creating a candidate carrier list of a plurality of carriers;
3 changing by a first unit operating on a first carrier of the plurality of
4 carriers to a second carrier of the plurality of carriers in response to a determination
5 that the quality of the first carrier is not acceptable, the second carrier being the
6 carrier other than the first carrier having the greatest measured quality;
7 measuring the quality of each of the plurality of carriers;
8 ranking the plurality of carriers according to the measured quality; and
9 updating the candidate carrier list in accordance with the re-ranking
10 of the plurality of carriers.

1 24. The method of claim 23 wherein the step of measuring the quality of
2 the plurality of carriers occurs with reference to interference and multi-path
3 fading.

1 25. The method of claim 24 wherein the quality of the plurality of carriers
2 comprises a comparison of a carrier-signal strength to an interference-signal
3 strength.

1 26. The method of claim 25 wherein I comprises external interference
2 and self interference.

1 27. The method of claim 23 further comprising the steps of:
2 communicating an identity of the second carrier; and
3 marking the second carrier as being occupied.

1 28. The method of claim 27 further comprising the step of communicating
2 the updated list over a frequency-hopping (FH) carrier.

1 29. The method of claim 28 wherein the FH carrier operates according
2 to an ad-hoc wireless system.

1 30. The method of claim 27 further comprising the step of communicating
2 the updated list over a high-speed (HS) carrier.

1 31. The method of claim 23 further comprising, following the step of
2 changing, the steps of:
3 listening by the first unit and transmitting by a second unit at a priority
4 slot of the second carrier assigned to the second unit; and
5 transmitting by the first unit and listening by the second unit at a
6 priority slot of the second carrier assigned to the first unit.

1 32. The method of claim 23 wherein the step of measuring occurs
2 according to a frequency-hopping mode.

1 33. The method of claim 32 further comprising the step of communicating
2 the updated list over a high-speed (HS) carrier.

1 34. A method of updating a list of acceptable carriers comprising the steps
2 of:
3 determining whether a predetermined time period has elapsed since
4 a plurality of carriers was last ranked according to measured quality;
5 determining whether a carrier change has occurred since the plurality
6 of carriers was ranked according to measured quality; and
7 in response to a determination that either the predetermined time
8 period has elapsed or that a carrier change has occurred since the plurality of carriers
9 was ranked according to measured quality, measuring quality of the plurality of
10 carriers and ranking the carriers according to the most recent quality measurement.

1 35. The method of claim 34 wherein the quality of the plurality of carriers
2 is measured with reference to interference and multi-path fading.

1 36. The method of claim 35 wherein the quality of the plurality of carriers
2 comprises a ratio of a carrier-signal-to-interference-signal strength ratio (C/I).

1 37. The method of claim 36 wherein I comprises external interference and
2 self interference.

1 38. The method of claim 34 wherein the step of measuring occurs in a
2 frequency-hopping mode.

1 39. The method of claim 34 further comprising the step of using the
2 ranking in a high-speed mode.